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Claim Rejections - 35 USC §103(a)

2. The Examiner's rejection of Claims 1-31 under 35 U.S.C. 103(a) as being unpatentable over Lahrman et al. (US Patent No. 6,462,308) in view of Suh et al. (US Patent No. 6,629,464), has been studied and the Applicants respectfully disagree with the Examiner's reasons for the 102 rejection because the Lahrman and Suh patents fail to teach or disclose all the elements of the rejected claims. The Lahrman and Suh patents fail to teach the following steps:

" (b) measuring at least one natural frequency for each of the laser beam pulses during a period of time during the duration of each corresponding one of the plasmas,

(c) calculating natural frequency shifts from a baseline natural frequency for the measured natural frequencies for the measured natural frequencies for at least a portion of the laser beam pulses,".

These steps are found in both independent Claims 1 and 22. The Lahrman patent specifically teaches:

" determining a natural frequency of a test workpiece before laser shock peening said test workpiece;

determining the frequency shift of said natural frequency of said test workpiece after said test workpiece has been laser shock peened;

comparing said frequency shift to a predetermined

acceptable range of frequency shift for said test workpiece;

processing production workpieces if said frequency shift is within said acceptable range of frequency shift."

Clearly, the Lahrman patent discloses measuring frequency shifts after the entire workpiece has been laser shock peened while the Claims of the present Application recite "measuring at least one natural frequency for each of the laser beam pulses during a period of time during the duration of each corresponding one of the plasmas". The present Application claims measuring natural frequencies during laser shock peening while the Lahrman patent teaches measuring natural frequency shifts after laser shock peening.

Furthermore, it does not appear that Lahrman teaches collecting statistical data that would lend itself to a pre-determined correlation of test piece statistical function data that is taught by Suh. Therefore, it would not have been obvious to one of ordinary skill in the art at the time of the invention to utilize a pass/fail criteria, cycle fatigue testing, the presence of a flaw and a detector placed on the workpiece, as taught by Suh et al. in the Lahrman et al. system because of improved accuracy of measurements, quality control, workpiece longevity under operating conditions and improved operating characteristics of the workpiece. Nothing in Lahrman suggests a combination with Suh or any reason to be combined with Suh because Suh also collects data for each laser beam pulse (see column 2, lines 43-61 of Suh).

Therefore, the Applicants respectfully submit that the Examiner's rejection of Claims 1-31 under 35 U.S.C. 103(a) as

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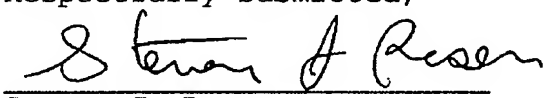
being unpatentable over Lahrman et al. (US Patent No. 6,462,308) in view of Suh et al. (US Patent No. 6,629,464) has been overcome by the remarks above and that Claims 1-31 are in condition for allowance and requests that they be passed on to issue.

Respectfully submitted,



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